

What is claimed is:

1. A roller pump comprising a pump housing having a cylindrical inner surface, a rotor fixed to a drive shaft placed at the central portion of said pump housing, rollers provided around said rotor and a driver for driving said drive shaft through a reduction gear, said rollers pressing an elastic tube installed between said rollers and said inner surface of said pump housing toward said inner surface to transfer a liquid in said elastic tube in a direction, being rotated by said rotor to move the place where said rollers press said elastic tube, wherein said pump housing and said reduction gear are integrated into one body and an output shaft of said reduction gear is fixed to said drive shaft of said rotor.
2. The roller pump according to claim 1, wherein said driver is a stepping motor provided with a rotation sensor and being roll controllable.
3. The roller pump according to claim 1, wherein a part of said inner surface of said pump housing is composed of a semicircle of which center coincides with the center of said drive shaft, another part of said inner surface is composed of a partial circle of which center is shifted from the center of said drive shaft, and of which the length of radius is equal to that of said semicircle, each of end portions of said semicircle and each of end portions of said partial circle are connected by each of tangential lines extending from each of said end portions of said semicircle toward each of said end portions of said partial circle respectively, said partial circle is made to be a form suitable to be connected to an inlet slot for attaching an inlet portion of said elastic tube, and to an outlet slot for attaching an outlet portion of said elastic tube.
4. The roller pump according to claim 2, wherein a part of said inner surface of said pump housing is composed of a semicircle of which center coincides with the center of said drive shaft, another part of said inner surface is composed of a partial circle of which center is shifted from the center of said drive shaft, and of which the length of radius is equal to that of said semicircle, each of end portions of said semicircle and each of end portions of said partial circle are connected by each of tangential lines extending from each of said end portions of said semicircle toward each of said end portions of said partial circle

respectively, said partial circle is made to be a form suitable to be connected to an inlet slot for attaching an inlet portion of said elastic tube, and to an outlet slot for attaching an outlet portion of said elastic tube.

5. The roller pump according to claim 1, wherein a part of said inner surface of said pump housing is composed of a semicircle of which center coincides with the center of said drive shaft, another part of said inner surface is composed of a partial circle of which center is shifted from the center of said drive shaft, and of which the length of radius is larger than that of said semicircle, each of end portions of said semicircle and each of end portions of said partial circle are connected respectively, said partial circle is made to be a form suitable to be connected to an inlet slot for attaching an inlet portion of said elastic tube, and to an outlet slot for attaching an outlet portion of said elastic tube.
6. The roller pump according to claim 2, wherein a part of said inner surface of said pump housing is composed of a semicircle of which center coincides with the center of said drive shaft, another part of said inner surface is composed of a partial circle of which center is shifted from the center of said drive shaft, and of which the length of radius is larger than that of said semicircle, each of end portions of said semicircle and each of end portions of said partial circle are connected respectively, said partial circle is made to be a form suitable to be connected to an inlet slot for attaching an inlet portion of said elastic tube, and to an outlet slot for attaching an outlet portion of said elastic tube.
7. The roller pump according to claim 1, wherein an inlet slot into which an inlet portion of said elastic tube is inserted to attach said inlet portion to said pump housing is provided, said inlet slot is provided with a lever for pressing said inlet portion into said inlet slot to hold said inlet portion in said inlet slot, said lever being rotated perpendicularly to the axis of said elastic tube by a spring force to press said inlet portion of said elastic tube, an upper end portion of said lever is tilted relative to the vertical axis, said inlet portion is attached to said pump housing being pushed downward through a place between said upper end portion and said inlet slot, and an outlet

slot into which an outlet portion of said elastic tube is inserted to attach said outlet portion to said pump housing is provided, said outlet slot is provided with a lever for pressing said outlet portion into said outlet slot to hold said outlet portion in said outlet slot, said lever being rotated perpendicularly to the axis of said elastic tube by a spring force to press said outlet portion of said elastic tube, an upper end portion of said lever is tilted relative to the vertical axis, said outlet portion is attached to said pump housing being pushed downward through a place between said upper end portion and said outlet slot.

8. The roller pump according to claim 2, wherein an inlet slot into which an inlet portion of said elastic tube is inserted to attach said inlet portion to said pump housing is provided, said inlet slot is provided with a lever for pressing said inlet portion into said inlet slot to hold said inlet portion in said inlet slot, said lever being rotated perpendicularly to the axis of said elastic tube by a spring force to press said inlet portion of said elastic tube, an upper end portion of said lever is tilted relative to the vertical axis, said inlet portion is attached to said pump housing being pushed downward through a place between said upper end portion and said inlet slot, and an outlet slot into which an outlet portion of said elastic tube is inserted to attach said outlet portion to said pump housing is provided, said outlet slot is provided with a lever for pressing said outlet portion into said outlet slot to hold said outlet portion in said outlet slot, said lever being rotated perpendicularly to the axis of said elastic tube by a spring force to press said outlet portion of said elastic tube, an upper end portion of said lever is tilted relative to the vertical axis, said outlet portion is attached to said pump housing being pushed downward through a place between said upper end portion and said outlet slot.
9. The roller pump according to claim 3, wherein said inlet slot is provided with a lever for pressing said inlet portion into said inlet slot to hold said inlet portion in said inlet slot, said lever being rotated perpendicularly to the axis of said elastic tube by a spring force to press said inlet portion of said elastic tube, an upper end portion of said lever is tilted relative to the vertical axis, said inlet portion is

attached to said pump housing being pushed downward through a place between said upper end portion and said inlet slot, and said outlet slot is provided with a lever for pressing said outlet portion into said outlet slot to hold said outlet portion in said outlet slot, said lever being rotated perpendicularly to the axis of said elastic tube by a spring force to press said outlet portion of said elastic tube, an upper end portion of said lever is tilted relative to the vertical axis, said outlet portion is attached to said pump housing being pushed downward through a place between said upper end portion and said outlet slot.

10. The roller pump according to claim 4, wherein said inlet slot is provided with a lever for pressing said inlet portion into said inlet slot to hold said inlet portion in said inlet slot, said lever being rotated perpendicularly to the axis of said elastic tube by a spring force to press said inlet portion of said elastic tube, an upper end portion of said lever is tilted relative to the vertical axis, said inlet portion is attached to said pump housing being pushed downward through a place between said upper end portion and said inlet slot, and said outlet slot is provided with a lever for pressing said outlet portion into said outlet slot to hold said outlet portion in said outlet slot, said lever being rotated perpendicularly to the axis of said elastic tube by a spring force to press said outlet portion of said elastic tube, an upper end portion of said lever is tilted relative to the vertical axis, said outlet portion is attached to said pump housing being pushed downward through a place between said upper end portion and said outlet slot.

11. The roller pump according to claim 5, wherein said inlet slot is provided with a lever for pressing said inlet portion into said inlet slot to hold said inlet portion in said inlet slot, said lever being rotated perpendicularly to the axis of said elastic tube by a spring force to press said inlet portion of said elastic tube, an upper end portion of said lever is tilted relative to the vertical axis, said inlet portion is attached to said pump housing being pushed downward through a place between said upper end portion and said inlet slot, said outlet slot is provided with a lever for pressing said outlet portion into said outlet slot to hold said outlet portion in said outlet slot, said lever

being rotated perpendicularly to the axis of said elastic tube by a spring force to press said outlet portion of said elastic tube, an upper end portion of said lever is tilted relative to the vertical axis, said outlet portion is attached to said pump housing being pushed downward through a place between said upper end portion and said outlet slot.

12. The roller pump according to claim 6, wherein said inlet slot is provided with a lever for pressing said inlet portion into said inlet slot to hold said inlet portion in said inlet slot, said lever being rotated perpendicularly to the axis of said elastic tube by a spring force to press said inlet portion of said elastic tube, an upper end portion of said lever is tilted relative to the vertical axis, said inlet portion is attached to said pump housing being pushed downward through a place between said upper end portion and said inlet slot, said outlet slot is provided with a lever for pressing said outlet portion into said outlet slot to hold said outlet portion in said outlet slot, said lever being rotated perpendicularly to the axis of said elastic tube by a spring force to press said outlet portion of said elastic tube, an upper end portion of said lever is tilted relative to the vertical axis, said outlet portion is attached to said pump housing being pushed downward through a place between said upper end portion and said outlet slot.